NAVY MEDICINE

January-February 1990

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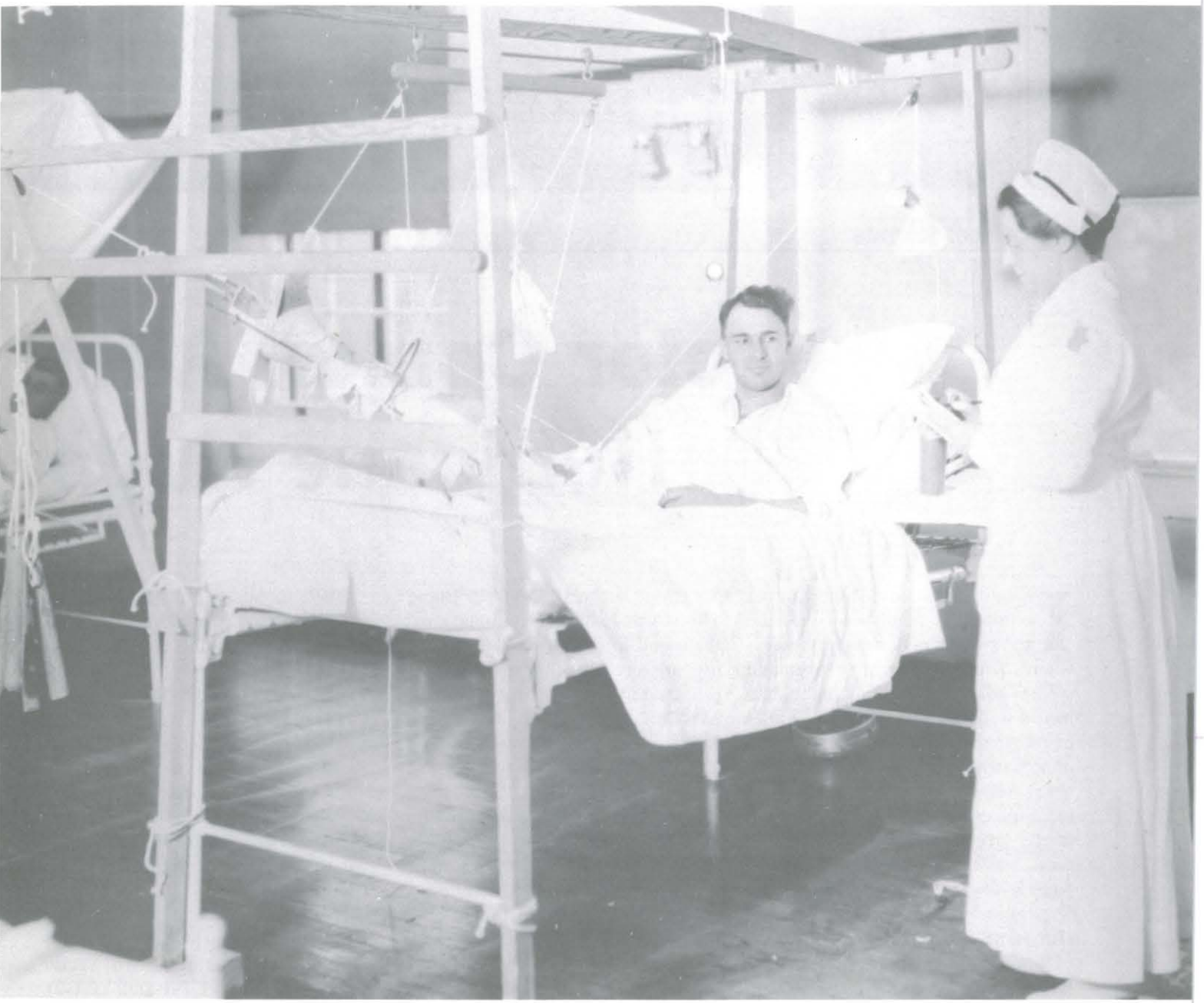
COVER: Last fall, a major earthquake rocked the San Francisco Bay area. Many were killed and injured when the Cypress Avenue structure carrying Interstate 880 through Oakland collapsed. Navy corpsmen were first on the scene providing emergency medical assistance and organizing rescue efforts. Story on page 6. Photo by HM1 Philip Goodrich, Naval Hospital, Oakland, CA.

Navy Medicine 1918



BUMED Archives

A traction patient at Naval Hospital, Mare Island, CA. Note the window sash weights at the lower left.

LT Joe Conlon

Department Rounds

Vector Control After Hurricane Hugo

Imagine hundreds of mosquitoes biting your family every minute and swarms of flies and rats everywhere. Your windows are broken and screens gone, if you're lucky enough to have a house still standing. Huge piles of refuse rot in the sun, breeding vermin. Newly formed pools of stagnant water release tens of thousands of mosquitoes every day. This vivid scene, overlooked by the national press, was repeated in the U.S. Virgin Islands, Puerto Rico, and Charleston, SC, following the destructive force of Hurricane Hugo.

In mid-September 1989, Hurricane Hugo began to sweep across the Caribbean with sustained winds of up to 180 mph. On 18 Sept, it struck the island of St. Croix in the U.S. Virgin Islands. The storm remained stationary over the island from 0330 until 0500, causing unprecedented destruction. Approximately 3 hours later, Hugo's eye passed 2 miles ENE of Roosevelt Roads, Puerto Rico. On the following Friday, Hugo's full force struck Charleston, SC.

Extensive damage to infrastructure occurred at all three locations. Flooding and the accumulation of standing water promoted large numbers of mosquitoes. The destruction of buildings and the disruption of regular waste management efforts also promoted the development of large numbers of filth flies and a potential rodent problem.

These threats to human health precipitated two separate requests to the Navy Environmental Health Center (NEHC), Norfolk, VA, for assistance. The first came from COMNAVACTS-CARIB to provide vector control assistance to NAVSTA Roosevelt Roads and several nearby installations. A second request was received shortly thereafter from the U.S. Public Health Service to provide assistance to the island of St. Croix, U.S. Virgin Islands.

As a Mobile Medical Augmentation Readiness Team (MMART) operation, NEHC mobilized two Vector Control Teams (VCT-1 and VCT-2), utilizing personnel from the Navy Disease Vector Ecology and Control Cen-

Opposite page: **Winds up to 185 mph destroyed or damaged 95 percent of the structures on St. Croix. The St. Croix Hospital, in the background, will have to be rebuilt due to water damage caused when one of the five tornadoes spawned by Hugo tore the roof off.**

ter, Jacksonville, FL (DVECC JAX), and the Navy Environmental and Preventive Medicine Unit No. 2 (EPMU-2), Norfolk, VA. A further request for vector control assistance came to DVECC JAX from the Naval Hospital, Charleston, SC, and a third vector control team (VCT-3) was dispatched in response.

The mission of each team was to provide technical and operational vector control assistance to the requesting authorities until vector population levels had declined to predisaster levels and local public health efforts could be resumed.

Within 20 hours of notification to deploy, VCT-1 and VCT-2 and their accompanying gear were staged on the flight line awaiting air transport to Puerto Rico and St. Croix, respectively. Compiling, packing, and certifying equipment and pesticides for air shipment was a team effort on the part of all military and civilian personnel at both DVECC JAX and EPMU-2.

Any deployment is a cooperative effort, and special thanks must be made to NSC Preservation and Packaging and Air Operations at both NAS JAX and NAS Oceana. Further acknowledgment must go to CINCLANTFLT Transportation and the Maryland Air National Guard whose cooperation and willingness to help vastly increased the ease of mobilization and deployment.

Control Efforts on Puerto Rico

VCT-1 was composed of LCDR T.W. Gale, MSC, medical entomologist and team leader; LTJG S.E. Rankin, MSC, USNR, medical entomologist; HM1 W.E. Krothe, preventive medicine technician, and HM2 A.L. Gourley, preventive medicine technician, all from DVECC JAX.

VCT-1 arrived at NAVSTA Roosevelt Roads via C-130 on the night of 28 Sept. They reported to COMNAVACTSCARIB and quickly established liaison with the local Preventive Medicine Service and Pest Control Shop. A quick assessment of the situation revealed that, in addition to the higher than normal mosquito counts, the destruction of windows and screens in housing areas magnified the problem.

Hordes of *Aedes taeniorhynchus,* a salt marsh mosquito, were breeding in the large expanse of surrounding mangrove swamps, and base personnel reported that they were being "eaten alive." Because environmental considerations precluded poisoning the aquatic immature stages (larvae) in the ecologically sensitive mangrove swamps, the mosquito control strategy focused on adulticide sprays. VCT-1 carried the latest in a series of lightweight, emergency ultralow volume (ULV) insecticide sprayers.

The Contingency ULV Spray System (CUSS-1), designed and developed by DVECC JAX's Testing and Evaluation Department, is an 8-pound electric spray system that attaches to any motor vehicle and runs off the vehicle's battery. Larger, commercial ULV sprayers were also used. Because of the very minute droplet size produced, ULV spray operations must be done under atmospheric conditions that usually exist only at dawn and dusk.

An intensive ULV spray schedule was begun, with treatments from 0500 to 0700 and from 1600 to 1900 each day. Between the morning and evening spray cycles, team members conducted vector surveillance and control on NAVSTA Roosevelt Roads, NSGA Sabana Seca, and the town of Luquillo on the island of Puerto Rico, and also at NAF and Camp Garcia on the island of Vieques.

After 10 days of intensive effort, mosquito populations were reduced to an acceptable level. Vector surveillance and control responsibility reverted to PMS and PWC, and VCT-1 returned to Jacksonville on 12 Oct.

St. Croix

VCT-2 included LCDR H.R. Stevenson, MSC, medical entomologist and team leader; HM1 A.M.

LT Conlon uses a backpack sprayer to control flies in an abandoned warehouse at Alexander Hamilton Airport.

HMCS Ken Roden

HMCS Ken Roden

LT Conlon surveys for mosquito larvae next to a Fredericksted, St. Croix dump site.

Cardwell, preventive medicine technician; and HM1 E.M. Pressley, preventive medicine technician, all from EPMU-2; in addition to LT J.M. Conlon, MSC, medical entomologist, and HMCS K.L. Roden, preventive medicine technician, from DVECC JAX. The elements from EPMU-2 arrived on St. Croix on 31 Sept, followed by the personnel from DVECC JAX on 1 Oct.

VCT-2 quickly meshed with elements of the Alabama National Guard and established liaison with the Federal Emergency Management Agency (FEMA), USPHS, and representatives of COMNAVACTSCARIB. Almost immediately, they began vector surveillance in and around the Alexander Hamilton International Airport and the National Guard's compound. Because of the extensive destruction of buildings and complete disruption of waste management services, the filth fly problem was significantly greater here than in Puerto Rico.

Effective filth fly control was achieved with residual pesticides dispersed by backpack sprayers and Flytek poison bait, which was dispersed by hand. Extensive mosquito surveillance revealed that *Aedes aegypti,* the primary vector of dengue, was breeding throughout, especially in the town of Christiansted. Many breeding sites were cisterns used for drinking water, so larvicides again could not be used.

VCT-2 initiated a successful public relations effort and received permission from island authorities to conduct ULV operations on 3 Oct. They were equipped with three truck-mounted, electric ULV sprayers and a thermal fogger, which uses heat to produce a fine, very visible pesticide mist.

In addition to vector control and surveillance, VCT-2 repaired local pest control equipment and trained local Public Health representatives in the proper use of ULV spray equipment. Following 16-hour days and life under very primitive conditions, VCT-2's success was demonstrated by the significant reduction of vector population levels. They returned to their respective units on 12 Oct.

Charleston, SC

VCT-3 was composed of LT D.M. Claborn, MSC, USNR, medical entomologist and team leader, and HM1 D.M. Spafford, preventive medicine technician, both from DVECC JAX. They drove to Charleston on 8 Oct, where they coordinated their efforts with NAVSTA Preventive Medicine Services and the NWS Pest Control Shop. They also established liaison with the Charleston County Mosquito Abatement District and the Air Force Aerial Spray Team.

A major problem on these bases was the accumulation of large piles of brush from the many fallen trees. These dense deadfalls provided secure resting places for various man-biting mosquitoes. Surveillance revealed landing counts in excess of 75 mosquitoes per man *per minute.* The brush piles were often 10 feet high and thick enough to be impenetrable to conventional ULV space spraying.

In this unique situation, VCT-3 used residual pesticides applied with a trailer-mounted turbine sprayer. This machine, generally used for controlling pests on turfgrass and landscape plants, has a high-pressure blower with nozzle velocities up to 175 mph. This power, combined with the heavier droplet produced by this machine, easily penetrated the dense masses of fallen vegetation that Hugo had produced. The residual action of the pesticide promised to kill the majority of mosquitoes that used the brush for shelter over a period of several weeks.

VCT-3 also acted as the ground team to monitor the aerial applications provided by the Air Force Aerial Spray Team. VCT-3 continued operation while instructing local PWC pest controllers how best to utilize the turbine sprayer. After a significant reduction in mosquito population levels, the turbine sprayer was loaned to NAVSTA Charleston, and VCT-3 returned home on 13 Oct.

Each of the above presented a unique situation and unique problems that were readily addressed and remedied on site by VCTs. The many long hours of training and practice for MMART deployment have, without a doubt, proven their value, allowing an unprecedented simultaneous deployment of three highly successful teams into three geographic areas. □

—LCDR M.T. Wooster, MSC, Navy Disease Vector Ecology and Control Center, Jacksonville, FL.

Missouri Crewmembers Become 1st Responders

Medical emergencies. They could happen anytime and anywhere. A medical emergency could be a family member who has collapsed because of a heart attack, or it could be a total stranger involved in a traffic accident. Medical emergencies raise questions with everyone: "What do I do?" "How should I respond?"

Aboard a Navy ship a medical emergency can also come anytime or anywhere. For the crew of that ship, being the first to respond and knowing what to do can mean saving a life or preventing further injury. Since Pacific Exercise '89 (PACEX) USS *Missouri* (BB-63), homeported in Long Beach, CA, has begun a course that answers the question: "How do I respond?"

The course is entitled "1st Responder," and according to Dr. Murray Norcross, one of *Missouri*'s medical officers, it may be the most extensive first aid instruction offered aboard a Navy ship. "I don't know if there are other ships that offer this type of course," said Norcross. "I think *Missouri* is the first to attempt something on this large of scale."

The 6-week course, taught by *Missouri*'s medical department, was started at the beginning of PACEX and had 25 *Missouri* sailors signed up for it including the commanding officer, CAPT John J. Chernesky. "It was something I've always wanted to do, and I think the first response to *Missouri*'s 1st Responder Course has been great," said Chernesky.

In the training, which is recognized by the American Red Cross, the crewmembers have been offered a wide variety of emergency medical knowledge and have been shown ways to apply that knowledge. Students learn life-saving techniques such as how to assess an emergency situation, stopping bleeding, splinting broken bones, and applying cardiopulmonary resuscitation (CPR). They even learn to handle emergency childbirths.

According to Dr. Norcross, the course also expands the Emergency Medical System (EMS) on and off the ship. "Being a 1st Responder enables the ship's medical department to stretch *Missouri*'s medical "fingers" throughout the ship."

As the first 25 sailors "graduated," the "stretching of *Missouri*'s medical fingers" became evident. From deck to operations, from weapons to communications; *Missouri* now has several qualified 1st Responders to answer the call of a fallen and injured shipmate. "I'd like to see everyone on ship receive this training, " said Norcross. "I'd also like to see the course offered throughout the Navy and on every ship."

The medical department plans on offering 1st Responder training once every 3 months, thus providing *Missouri*'s sailors with the answer to the question of how to respond to an emergency medical situation. □

—Story by JO2 Scott A. Thornbloom. Photo by PH3 Brad Dillon, USS *Missouri* Public Affairs Office.

First members of *Missouri*'s 1st Responder Course practice what they have learned.

The Day the Earth *Moved*

Diane LaMacchia

JO2 T.S. Begasse

Planet Earth got everyone's attention 17 Oct 1989 with a 15-second jolt to the San Francisco Bay area. Although a relatively small number of people—fewer than 70—actually lost their lives in the Loma Prieta earthquake, people around the globe received a sobering reminder of how tenuous life is, even when they think they're standing on solid ground.

Not far from the most killing damage to a leg of multilane Interstate 880, which runs north and south along the San Francisco Bay, stands Naval Hospital, Oakland. Oak Knoll, as it is known locally is up in the Oakland hills, about 6 miles from the freeway.

HN Anthony Beltran double checks medical gear in his ambulance.

Naval Hospital, Oakland, CA

LCDR Alison L. Mueller, NC, assists in the extrication of earthquake victims.

Navy medical personnel from Oak Knoll were intensely involved in rescue efforts from the moment the earthquake hit. Quite by chance, the very first medical people to arrive on the scene minutes after the shock were two corpsmen enroute to the hospital from Travis Air Force Base. The personnel who followed them that week were sent to the now infamous Cypress structure by the commanding officer of the hospital, RADM David M. Lichtman, MC.

The author spoke to the admiral and others who spent a harrowing week at the Cypress structure in the aftermath of destruction. The following are some of their recollections.

"I went home early that night," recalls Lichtman. I'm never home before 5 o'clock. But they were starting to televise the pregame game show to the World Series at 5 o'clock, so being a very avid Oakland A's fan, I went up to my quarters. The only one in the house was the dog, and I thought the dog was doing something strange, like pulling the tablecloth off the table with the china, because I heard a lot of clattering. I didn't feel anything, I just heard it. Then I realized when the walls started shaking that it was an earthquake. It felt like the house was jumping up and down.

"I live on top of the hill, right over the hospital, and I thought that this was a good-sized earthquake. When an earthquake hits, you don't know if it's a small one right under you, or a big one quite a bit away. I knew this was the biggest one I'd ever been in, but I thought maybe it was right under our house and wasn't a major thing at all. [Author's Note: The Hayward Fault runs directly through the hospital grounds and close to the admiral's quarters.]

"I walked back inside to where my TV is. From my family room I could look right down over the hospital and see Candlestick Park across the bay. I could also watch the baseball game on TV and see down into the ballpark in Oakland. I went to check out what was going on—Was the hospital still standing? The television by that time was blinking away, so I knew we had something that was bigger than a local thing. I flipped stations—some were off, some were on—and I knew that we had a major earthquake."

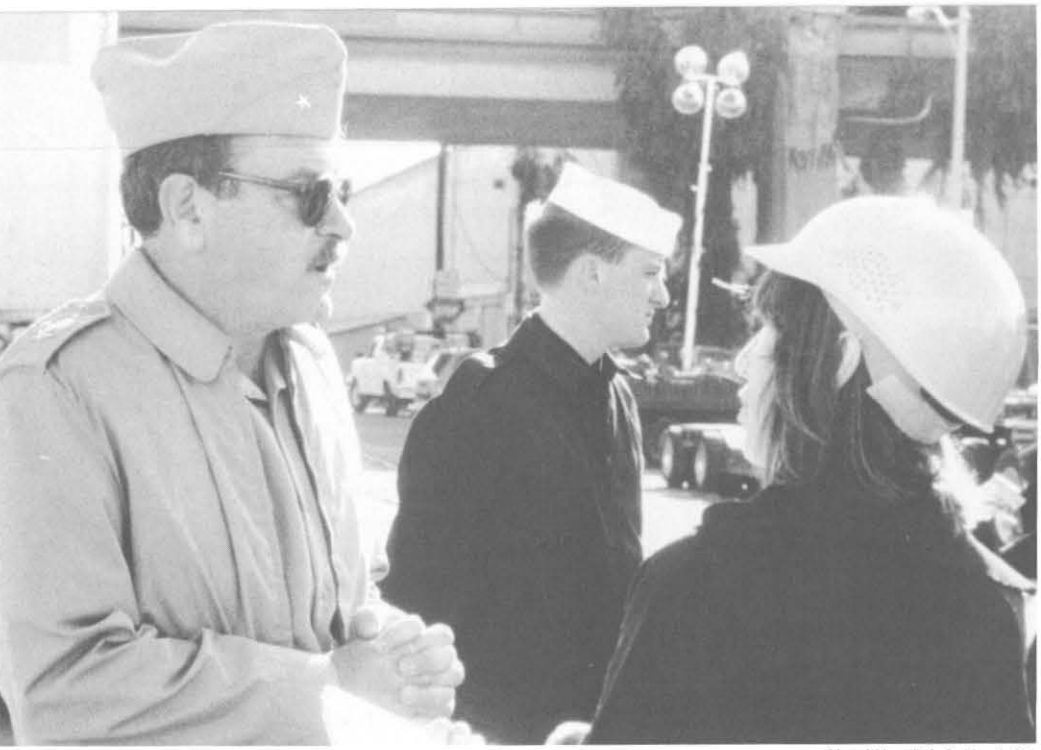
Within 10 minutes of the quake, RADM Lichtman returned to the hospital. There, CAPT June Riddell, NC, informed him that there had only been minor cosmetic damage to the hospital. When he arrived at the quarterdeck, CDR Gary Schick, MSC, the disaster control officer and director for administration, had already taken charge. The admiral learned that there had been casualties and immediately activated the hospital's disaster plan and ordered a personnel recall to prepare to receive casualties.

But there were some problems. The outside phone line was down. The beeper system was down. Many of the doctors, nurses, and corpsmen had left for the day. Most of the hospital's senior physicians were in San Diego for a Graduate Medical Education selection board.

"I knew that the people who were here were not going to be familiar with the roles they would have to play," Lichtman went on. "We had a disaster drill last April to coincide with the bay area's Earthquake Awareness Week, but a lot of key players would not be in the same roles.

"Gary Schick, the acting disaster control officer, was doing a remarkably good job, telling everybody where things were. I decided to walk around and make sure everybody knew what their roles were, because I knew many of the roles would be unfamiliar to them.

"After about an hour or two, ambulances began arriving with casualties. The reality hit home: this was not a drill. It was not clear at first how many casualties would be coming from the crashed Cypress structure." RADM Lichtman called Fort Ord and requested extra blood, which was flown in by helicopter. As it turned out, the hospital received 15 casualties that night, most of whom were civilians with minor injuries from falling



Naval Hospital, Oakland, CA

Left: **RADM David Lichtman talks with a media representative at the site of the Cypress structure collapse.** ***Below:*** **HN William W. Wicker, Jr., was one of the first corpsmen on the scene of the collapse.**

JO2 T.S. Begasse

objects. One patient had suffered a major injury—crushed ribs and a collapsed lung. Meanwhile, Navy personnel were at work at the Cypress site itself.

"I went down the very next day and met with the county coroner, Mr. Anderson," said Lichtman. "I told him I would arrange to have people come down on rotating watches and be part of his team."

The pararescue squad from McClelland Air Force Base had come down and also joined in. As people got to know each other, they developed a system, all under the auspices of the Alameda County Sheriff's Department. (See side bar) The pararescue people and Navy Medical photographers were the ones who crawled around, locating cars. The CALTRANS (California Transportation Department) poked holes in the structure so they could get to the cars, the fire department used their heavy equipment—the jaws of life—to break open cars, and Oak Knoll personnel went in and extricated the bodies. Then the coroner took over.

RADM Lichtman says the earthquake prepared naval hospital personnel for the possibility of a bigger one. "In a sense we were very lucky because this turned out to be, in essence, a drill. We were fortunate in that we did not sustain any of our own damage, and fortunate in that total casualties in California numbered only 67," he pointed out.

"If the big one strikes, we'll be more ready, provided our resources aren't destroyed. We have a disaster plan; we also have an evacuation plan. We have a San Francisco Medical Command plan in which we could use medical facilities aboard *Mercy* or Letterman Army Medical Center.

"The first thing that we have to realize is that everybody ought to learn each other's jobs because the players are definitely not all going to be the same. People have to be able to step in and assume each other's roles.

"Second is that we have to learn how to do without critical systems—communications systems, telephone systems. Maybe in the next drill we'll

Naval Hospital, Oakland, CA

LCDR Mueller and LT T.C. Buckout, County of Alameda Sheriff's Department, discuss the extrication process at the Interstate 880 Cypress structure site.

play with different rules. We won't have phones, and the people who are supposed to be in charge will be dead. Then we'll see how people respond to the fact that the leaders they expect to be there are not.

"We also learned how important psychological support was—making sure everyone was debriefed and cared for."

"Everyone was a hero. Some people were able to express their heroism, yet those that weren't were also standing by ready to sacrifice themselves in any way possible by being on the scene. The staff of this hospital has a very strong can-do attitude.

HN Anthony Beltran, 21, was enroute to Oak Knoll from Travis Air Force Base when the earthquake hit. He and fellow corpsman HN Bill Wicker were transporting a patient who had undergone some routine diagnostic tests. A California Highway Patrol flagged down their ambulance as they approached the Cypress structure on Interstate 880, and Beltran and Wicker pulled over as close to the collapsed section of freeway as they could get—about a quarter of a mile away. They hadn't felt the earthquake and didn't learn there had been one until hours later; they thought there had been a major accident.

The two corpsmen split up. Beltran didn't see Wicker again until much later that night. Wicker took his patient with him to help out. Any immediate medical care many of the victims received early that evening, came from these two corpsmen. They encountered people standing next to their cars or wandering in a daze. Their training in emergency medicine took over.

"Whatever came along, I took care of, because they couldn't get the patients down off the structure right away," said HN Beltran. I noticed symptoms which, going through school, I thought I'd never need to know. But I'm glad it came back to me—treating shock, stopping bleeding, splinting fractures. I extricated people and did whatever was necessary to keep them from dying."

Admiral Lichtman,

It has now been a month since the earthquake of October 17, 1989 that so devastated the bay area. Things have settled down somewhat in my office, and I have had an opportunity to reflect upon those days following the disaster. The incident itself was horrifying, but the courage, strength, and unity of the many organizations and people that worked throughout the crisis made me greatful that we live in such a great Nation with its nearly limitless resources.

I would like to take this opportunity to personally thank you for sharing the Navy's resources with the unit I was assigned to during the crisis. I would also like to commend the actions of all of your staff that was on site at the Cypress structure. In particular, I would like to commend the action of LCDR Alison Mueller and her staff and Petty Officer Phil Goodrich and his crew. LCDR Mueller's staff's expertise in extrication was a much needed asset, and it was appreciated by this officer. Without her group's effort, I am sure the task of removing the victims would have been much more traumatic to the rescuers, and the task would have taken considerably more time. Petty Officer Goodrich's crew also provided a necessary expertise that was very much appreciated. Literally, the hundreds of photographs taken by himself and his teams documented the actions of all involved, the precise locations of the many victims, and the conditions of those victims. I am also sure the many photos taken of the structure itself by the Navy team will eventually be of historical significance as well. It is especially touching to me to know that these brave men and women that performed these extraordinary deeds did so as volunteers and, as such, received no special compensation.

On October 20, 1989, the Coroner's Office removed 13 victims from the Cypress structure; your personnel was there at each one. I would like to point out two extrications in particular where the actions and courage of your people will always be with my memory. The first one occurred in the morning hours, while President Bush toured the havoc that once was the Cypress freeway. I received orders to take a Sheriff's team to the structure near West Grand Avenue and remove the remains of one of the victims. LCDR Mueller, whom I had just met that morning, provided two Air Force pararescue members and Petty Officer Goodrich to assist us with the removal.

At the site, it was necessary to climb out and down over the upper deck of the structure and onto the lower deck. Approximately 10 feet separated the two decks. The two Air Force men went over first and caught the rest of us as we climbed down, including Petty Officer Goodrich. Once on the lower deck, one of the Air Force fellows pointed out the remains to me. The situation was uncertain at best. Removal of the victim necessitated crawling between the bottom of the upper deck and the roadway of the lower deck. Only 10 inches separated the two where we had enter. The area itself had been blackened by the heavy smoke of a car fire, little light was entering the confined space, and the smell of charred, decaying flesh consumed the air. The remains of one poor soul lay midway across the structure on the roadway in this vision of hell.

I assessed the dangers and decided to take only one Deputy Sheriff with me to remove the remains. However, before I had crawled 3 feet, one of the Air Force personnel and Petty Officer Goodrich had crawled in with me to assist. Petty Officer Goodrich photographed the remains and gave perspective to the area. The Air Force member assisted me in removing the remains. Many, many thoughts raced through my mind while we were all in that compressed area, and my worst one came to life as the structure shifted and settled. With the remains of the victim, we all scrambled to the shallow opening of the two sections. I have thanked God many times since, that we all made it out of there alive.

Later that same day, in the early afternoon, we were again called upon to remove still another victim. The extrication area lay in the northern section of the Cypress in the least stable area of the structure. The vehicle in which the victim was contained had been crushed nearly in half by the casement of the upper deck. Half of the victim's body was under this casement, it was going to be a very difficult extrication. Many groups were there to assist in the extrication, but because of the precarious location of the victim and the difficulty that was anticipated in removing the victim, no one was sure how best to approach the task. LCDR Mueller and her team took the initiative. They climbed down into the hole that contained the vehicle and the victim and began the grisly ordeal of removing the victim. With complete disregard for their situation, these professionals worked for over an hour to remove this unknown person. Shortly after LCDR Mueller's team completed the extrication, CALTRANS ordered all of the rescue personnel at that particular area out, as the structure had shifted so much that it was in danger of collapsing.

What was required of LCDR Mueller and her group to remove that person was, and is, indescribable. I can only say I do not believe I could have done the task myself. LCDR Mueller and that rescue team persevered under a most extreme circumstance, and I commend their courage.

I believe you have a right to be proud of the actions of all your staff assigned to the Cypress area, as I am. Their cool, professional, and caring demeanor provided dignity and calm to a storm of chaos and devastation.

Needless to say Admiral, I am deeply impressed with your personnel. It was an honor and privilege to serve with such men and women. Their courage, selflessness, and perseverance will live in my mind forever. God bless you and them.

Sincerest regards,

Marc A. Thompson, Sergeant
Service Section
Alameda County Sheriff's Department
15001 Foothill Blvd.
San Leandro, CA

About 10 minutes after the earthquake hit, two more corpsmen from Naval Hospital, Oakland jumped in an ambulance and headed for the Cypress structure. Wicker and Beltran had radioed for help.

HN Kurt Buchholz, 20, described what was different about this scene from others he had experienced working in the emergency room. "You don't see people quite that smashed. We had to pause for a couple of seconds and just look to get the information into our brains. People were coming out with a whole arm crushed, a whole body crushed, but they'd still be breathing. In a car accident you see fractures, but not these kinds of compressions. And it wasn't one patient; you'd see 20 of them coming out at one time."

Buchholz pulled victims out of automobiles and took them to a local hospital in his ambulance. He worked on people with multiple fractures and whose limbs were all broken, fractured skulls, major head wounds, and compressed chests. Later, he wondered if some of his patients made it.

Buchholz was particularly impressed at the way the neighborhood people banded together to save lives that night. "I think you really learn about how much the outside community sticks together. There were very few medical personnel there. The civilians around the neighborhood and the firemen really pulled together. You could feel the teamwork. If I asked for a flashlight, it would be up there in one minute. The Red Cross had blankets there in 20 minutes. Civilians brought their own ladders and equipment."

The corpsman's experiences that night and the next 3 days he volunteered his time changed his feeling about Oakland forever. "I used to hate this community until that happened. I used to think it was a bad place to live. I guess you learn to trust people a little bit more after something like that happens." □

Ms. LaMacchia is Public Affairs Officer at Naval Hospital, Oakland, CA 94627-5000.

Highlights From the Navy Medical Research and Development Command

Bethesda, MD

• NMRDC Initiates Studies at MTFs

Over the past few months, three studies proposed by physicians at Navy hospitals have been approved and funded by the Navy Medical Research and Development Command (NMRDC). Two studies have been initiated at Naval Hospital, San Diego, CA, one to test the utility of hypertonic saline administration for resuscitation in a hypovolemia pig model, and a second study to assess various treatment regimens for renal failure associated with acute tubular necrosis. Also, investigators at the National Naval Medical Center, Bethesda, have begun a prospective study of the effect of deployment aboard surface vessels and submarines on cholesterol level and type. Funds have been provided by NMRDC for equipment, supplies, travel, and additional personnel, when necessary, to support these efforts. It is believed that this is the beginning of a long, fruitful relationship between the R&D community and MTFs (medical treatment facilities). Additional proposals and/or inquiries about potential research opportunities are welcome.

* * *

• Novel, Shallow-Depth Decompression Tables Will Extend Navy Diving

Decompression sickness is normally associated with deep diving but, occasionally, this serious condition occurs after long exposure to shallow depths. Extended shallow diving is desirable in certain Navy operations but has not been authorized because the lack of appropriate decompression schedules has left divers at risk for developing decompression sickness. Now, however, using novel approaches and various mathematical models, diving medical scientists at the Naval Medical Research Institute, Bethesda, and the Naval Submarine Medical Research Laboratory, Groton, CT, have developed and tested the required set of hyperbaric exposure tables. Pressure testing various manned enclosures, tanks, voids, and other compartments will now be significantly safer. Presently, these tables are under review by the Supervisor of Diving and the Chief, Bureau of Medicine and Surgery and are expected to be included either in the U.S. Navy Diving Manual or in a new instruction governing nontraditional hyperbaric exposure limits.

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• Navy Dentists Design a New Ballistic Face Shield

The Navy Dental Research Institute, Great Lakes, IL, in conjunction with Naval Sea Systems Command and Scott Aviation Corporation, Monrovia, CA, have developed a prototype ballistic face shield designed to protect Navy and Marine Corps personnel from fragmentation injury to the head and neck. The face shield weighs only 24.8 ounces and consists of a heat-resistant, optical-quality, clear polycarbonate visor and a lower Kevlar shield which can be attached to the Navy battle helmet by a mechanism which allows pivoting and locking of the shield in both the lowered and retracted position. The shield also can be worn with the MCU-2/P gas mask. Ballistic testing of the shield has demonstrated that the visor protects against a 17 grain, .22 caliber fragment traveling up to 750 feet/sec while the lower shield protects against the same fragment traveling 1,450 feet/sec. Human factors testing, performed by the Naval Health Research Center, San Diego, CA, has shown that there are no lasting performance or physiological effects that would contraindicate the use of the shield during sustained operations under conditions of moderate exercise and climate.

For additional information on these or other medical R&D projects, contact NMRDC Code 40 at Commercial (202) 295-1468 or Autovon 295-1468.

HM2 Taylor Barker

Naval Hospital, Charleston, SC

The Hospital and the Hurricane

CDR John R. Cusack, MC, USN

"The most fundamental principle of medicine is love."

—Paracelsus (1493-1541)

The modern hospital is a sprawling complex, filled with machines, specialists, and impressive technology, and, much too often, the sophistication of 20th century medicine abandons the bewildered patient in an awkward and impersonal setting. In earlier times, hospitals were known as safe havens of hospitality for those in need of shelter and sustenance. During the night of 21-22 Sept 1989, the personnel of Naval Hospital, Charleston, SC, had a forceful reminder of the elemental nature of hospital care.

On Monday, 18 Sept, commanding officer of the hospital, CAPT William McDaniel, MC, initiated orders to commence disaster planning and readiness. At the time, Hurricane Hugo (Category Grade IV) was ravaging the Greater Antilles archipelago and posed only a remote threat to the Carolina coast. Over the next 72 hours the powerful storm moved steadily along the northeastern rim of the Caribbean Sea and took a steady bead on the southern coastal area.

The officers, enlisted, and volunteer staff of Naval Hospital, Charleston were braced for the worst, but on the night of 21-22 Sept the hurricane descended on Charleston's historic tri-county area with stunning wrath. What resulted was a tragedy to human life and multibillion dollar disaster.

The tidal surge and devastating 135 mph-plus winds swiftly obliterated local water and electrical power sources. At 2239 hours on 21 Sept all external power to the hospital was lost. Standby diesel generators provided emergency power almost immediately, but with severely limited water and power, medical treatment took on a decidedly simpler nature.

Water, food, and essential equipment had to be hand-carried throughout the 10-story facility by corps staff and officers pitching in to help in any and every way possible. The medical staff treated the infirmed, including life-threatening emergencies, in dimly-lit corners and rain-soaked corridors with minimal hand-held technology, strong medical skills, and compassion.

A central command post was established to coordinate damage control and emergency response, and through-

out the disaster the hospital functioned at maximum capacity, serving as a refuge for all active duty personnel, dependents, and stranded civilians. Medical supplies, rations, water stores, self-contained power generation, and bedding had been readied in the early stages of preparation, and expanded facilities were established to deal with child care and near-term pregnancies. Just hours prior to the stormfall, the hospital accepted more than 80 civilian inpatient transfers from vulnerable local facilities, including about 50 geriatric medical patients from nearby nursing homes. Eighteen civilian psychiatric patients were taken in and ventilator patients from the Charleston Veterans' Administration Hospital were accepted for intensive care.

Naval Hospital, Charleston served as an open sanctuary for greater than 1,200 staff, dependents, and civilian personnel during the night of the hurricane's fury. Strangers who slept in hallways found the hospital warm and welcoming. The patient census rose from an average of 115 to 183. Through diligent disaster planning and preparedness, cots, bedding, blankets, and hot meals were provided for everyone, and no significant physical injuries were suffered to anyone who was protected within the Navy's then "public hospital."

When the storm arrived, the decks of the big hospital swayed like a ship riding out a storm at sea. LT Brad Nordyke, MC, said, "I felt like a junior officer aboard a ship in a storm. My medical training helped me handle multiple crises simultaneously." LTJG Cathy Selleck, NC, remembered, "When the hurricane approached, I was glad I wasn't alone. I was touched by how everyone in the hospital pitched in and stuck together." ENS Jenny Clark, NC, echoed similar sentiments. "We were all hot and exhausted, but I saw a real team spirit pulling together and caring for patients. That's what nursing is all about!"

During the first hour of the hurricane, unrelenting winds shattered the main lobby doors, and as the storm intensified the windows and walls seemed to give only modest protection from the driven rains. Water eventually breached the roof, flooding the intensive care unit and several surgical suites; patients and local refugees had to be constantly relocated as wind and water damage spread throughout the facility. At times it seemed the upper levels of the building would collapse from the strain, but sturdy construction, military preparedness, and a bit of luck curtailed major damage to the building.

In many ways the struggle took on aspects of a full-blown battle. During the height of the storm, HM3 Tracy Pearson coordinated communication in the command post and handled each problem with calm determination. "It was my damage control training that helped," he recalls. "Shore commands should emphasize emergency training, like the damage control preparation on our ships."

As would be expected in a crucial confrontation with nature, there were many unforeseen difficulties, but ingenuity and pragmatic flexibility became the order of the day. ENS Steve Tate, MSC, had the assignment of managing ancillary manpower during the emergency. He sums up the spirit of many who responded to the unusual demands, "In certain situations you can't 'go by the books.' People learned to make decisions guided by pressing needs and sheer common sense."

With the dawn of 22 Sept, the staff emerged from the hospital to view the stark destruction of the surrounding grounds and neighborhood. Eventually, upon returning to their homes, many discovered the complete destruction of their households. Virtually every member of the command suffered from the storm, ranging from moderate to ruinous personal property loss. In the face of catastrophic loss, all personnel sacrificed time and energy for the exigencies of their hospital and patient care.

CAPT Robert Scudder, DC, Naval Hospital, Charleston's executive officer, witnessed the self-sacrifice of all hands and said, "I believe people are basically good, and when this catastrophe so harshly tested the officers and corps staff of this command, their sacrifices for one another were incalculable."

Even today, physical and emotional pain lingers as a reminder of Hurricane Hugo's visit. The total financial loss to the Charleston area is staggering, but the hospital and staff has emerged from this unique maelstrom with a strengthened spirit. CDR Tom Sizemore, MC, director for Surgical Services, voices the thought of many, "When I was going through the hospital as the building swayed and water was coming in . . . people were afraid, but still performed phenomenally as a team. They honored themselves and the Navy."

In the aftermath, CAPT McDaniel reflected upon the valuable military lessons inherited from the hurricane. "We learned several things; practice *does* pay off, and technically I feel we performed very well. We learned lots of little, and some big, things to do differently next time, and have changed our disaster plan accordingly. But, far more than that, it was the spirit—*esprit de corps,* the confidence in ourselves and our shipmates, and the compassion shown that will stick with our officers, corps staff, civilians, and patients for the rest of their lives—long past any memory of how technically to deal with a disaster.

"Hurricane Hugo reminded us that no theoretical study is ever a substitute for the raw experience learned from having lived and delivered during moments of arduous hardship. We all now share a bond that is usually forged only during wartime. I am also proud of the fact that any Navy hospital in the world would have reacted similarly under the same circumstances. Being a part of the Navy *is* certainly more than a job!" □

Dr. Cusack is Chairman, Department of Psychiatry and Director for Medical Services, Naval Hospital, Charleston, SC 29408-6900.

Performance Counseling

HM1 Scott A. Haraty, USN

It was 0830 on Tuesday morning and HM3 Laurie Waters, one of the corpsmen in our department, came to me with a problem. She had just received her annual performance evaluation. Laurie thought her mark for professional performance was extremely low. At her previous command, all her evaluations were 4.0s. She felt the mark she had just received was unfair and did not accurately reflect her contribution to the department. Furthermore, she could not understand why it was not the same as it was from her past command. Obviously, she had not changed her standards.

We first discussed her performance mark which was 3.6. I explained that this was not extremely low by any standard and that at this command, competition is greater simply because there are more individuals with excellent skills. I also explained how the standards for the department were set.

Next, I asked her section supervisor if Laurie had been informed of what was expected of her and whether she had previously been counseled regarding her performance. The answer was no. I was surprised since I felt that our section supervisors knew that performance counseling is an integral part of performance evaluations. After some further investigating, I found that all section supervisors had been previously directed to counsel members on a quarterly basis.

I was curious as to how many others were not doing regular performance counseling, so I called a meeting of all section supervisors in our department. Some stated that they just didn't have time to fit it into their busy schedule, and others thought it just wasn't important.

First, I had to decide if this was an organizational problem or something that could be handled within the department. It was clear that the department had a procedure already in place, and that supervisors just were not counseling their people. I attributed this to a lack of understanding, and decided to get started on the problem right away.

I called another meeting of all the section supervisors to discuss the situation, and I asked the group how each of them would feel if what happened to Laurie had happened to them. They quickly got the point. I asked what we could

do as managers to correct the problem. Someone suggested better communication. I agreed.

Performance counseling is important, and supervisors must make time to fit it into their schedules. It should be conducted on a regular basis. We all want and need to know how well we are doing our jobs. We also want to know if the quality of our work is meeting acceptable standards.

People don't like to be surprised by their performance evaluations. Regular counseling throughout the evaluation period will go a long way in preventing problems and improving performance.

These sessions also improve communication which helps build and maintain a strong relationship based on mutual confidence. The sessions provide an opportunity early on to clear up any misunderstanding between what the supervisor expects, and provides the employee a chance to ask questions regarding their efforts. An early session would have been the appropriate time to explain to Laurie the differences between a large and small command and why there is greater competition at the latter.

After answering a few questions, I wrapped things up by concluding that performance counseling along with performance evaluations can not only improve performance but the net result can be an increase in productivity.

Over the next few weeks, we had meetings to discuss such things as preparing for counseling sessions, preparing performance plans for individuals, conducting counseling sessions, and how to perform followup sessions.

One year later I reviewed our departmental workload statistics for the last 5 years. For the first 4 years, individual productivity never varied by more than plus or minus 3 percent. For the fifth year, individual productivity rose 17 percent! I called a meeting of all the section supervisors to inquire how things were going with the performance counseling sessions. All supervisors felt their people were working harder and that there was much more camaraderie and teamwork in their departments. They also said they were spending much less time problem solving because employees had a much better understanding of what was expected of them. All supervisors felt their departments were happier as a whole.

I showed them the departmental statistics for the past 5 years and pointed out the large increase in productivity which started to rise shortly after all sections began regular performance counseling. Each section supervisor stated that nothing had occurred during that time that would have affected productivity, with the exception of the now regular counseling sessions. We had to conclude that the increase in individual productivity resulted from those sessions. For a small investment in time we had begun to reap enormous benefits.

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HM1 Haraty is an advanced medical laboratory technician assigned to the Department of Laboratory Animal Medicine, Uniformed Services University of the Health Sciences, Bethesda, MD 20814-4799.

'One-Call' Outpatient System

The September-October 1988 issue of *Navy Medicine* featured an article on Naval Hospital, Groton, CT, entitled "The 'One-Call' Outpatient Appointment System." It has come to our attention that the author, LT Maureen C. Olson, was omitted. We regret the error.

BUMED Archives

Thinned to the point of emaciation by malnutrition and illness, liberated U.S. POWs line up inside the forbidding walls of Bilibid Prison in Manila to pose for Navy photographers on 8 Feb 1945. The three jars containing rice, corn, and soybeans represent more than 1 day's ration per man. Thomas Brannon (see side bar), with pen in pocket, is second from right.

Rice is Life

LTJG Richard L. Bolster, HC, USN

In past issues many articles have centered on the experiences of Navy medical personnel held captive by the Japanese in World War II. The BUMED Archives is replete with documentary evidence of their experiences. Some of those fortunate enough to come home after the war became subjects for journalists or themselves recalled their lives as POWs.

Pharmacist's mate Richard L. Bolster was on duty aboard the submarine rescue vessel USS Pigeon *when the Japanese invaded the Philippines. On the afternoon of 4 May 1942, ordnance from a Japanese dive bomber hit* Pigeon*'s starboard quarter and the old ship sank in 8 minutes. Bolster escaped but was captured 2 days later when Corregidor fell. He spent the next 13 months in Manila's infamous Bilibid prison. The Japanese eventually transferred him and a draft of prisoners to another POW camp in the countryside—Cabanatuan, and then to Japan. There, he and his comrades became slave laborers chipping sand from castings in the foundry of Osaka's Mitsubishi shipyard.*

Following his liberation in September 1945, PhM1c Bolster was commissioned a LTJG in the Hospital Corps. He later wrote a moving account about an incident that occurred near the end of the war. That article first appeared in the April-May-June 1947 Hospital Corps Quarterly.

In the Orient everything is subordinate to rice. *Rice is life!* After 30 months of duty in Asiatic waters before the war, I knew this. After 40 months of imprisonment by the Japanese, I understood this.

There is a difference between knowing and understanding.

In the first year of imprisonment in the Philippines, 50 percent of the deaths could be traced to, "I just can't eat dry rice." Even our captors used to say, "Ah—(with a hiss through their teeth) but the Americans don't eat enough rice."

The Japanese were right for once—our doubting resulted from our proof (on paper) that the human body could not be sustained on rice alone. That was in 1942. In 1947, those of us who have returned are living evidence that *rice is life*. In the long months in prison camps there was not enough rice for those of us who had learned to *like* rice.

Many of us were selected from the prison camps in the Philippines for the "Japanese Far Eastern Excursion"—destination Japan. Most of us thought our traveling to be of the "one-way" variety. For the many who died en route and those who survived the trip only to die in the Japanese homeland, it was a one-way journey.

Japan, early in 1945, was in its death throes. At Kobe, on the south end of Honshu Island, the Japanese had collected large numbers of Allied war prisoners. We had been selected to help staff the Kobe International Prisoner of War Hospital. Comprised of medical department personnel, both officer and enlisted, from among the British, Australians, Dutch, and Americans, the hospital was operated as commensurately as possible in accordance with rank and rating.

The United States Navy was represented on the staff of the hospital by three medical officers, one dental officer, and six pharmacist's mates.

The Kobe prison was a Japanese enterprise of propaganda—an institution designed to please the expected victorious Allied troops. Considering the state of poverty and rationing in Japan at the time, the Japanese were as lavish in equipping the hospital, as their means and supplies would permit.

The hospital building had formerly been a missionary school. While not large, it was capable of housing more than 100 patients. It included a small operating room, a dental unit, a portable x-ray unit, a laboratory and three wards.

A pharmacy, adequate in size, and surprisingly well stocked completed the facilities available. The pharmacy is described as "surprisingly" well stocked, because it is difficult to picture, with words, the extreme shortage of all materials in Japan, during the last days of the war.

While the hospital was totally incapable of providing for all the sick in the prison camps in the area, much good was accomplished from the time the commissioning in the Spring of 1944 until it was destroyed by Allied bombing on the morning of 5 June 1945.

The wooden buildings were a pile of smoking ashes in a little more than 30 minutes after being struck by incendiary bombs at about 0930. Three patients died during the raid and a half dozen more who suffered third-degree burns, died as a result. We were able to salvage some supplies and equipment but the Japanese guard prevented us from entering the burning building for more than a pitifully short supply.

On the evening of the day following our loss of the hospital, we were ordered to move. The new camp location was about 8 miles away. We salvaged nails and improvised litters, from boards removed from the high fence that had encircled the hospital

area. The litters were for the sicker patients. Others we carried "piggy back" part of the way.

A light rain which made movement unpleasant, at about 2200 turned to a raging downpour with heavy gales of wind, adding to our misery and discomfort.

There we were, leaving the outskirts of Kobe, half-starved spectres of men, some walking, some carried, some half-carried; the smoldering ruins of the hospital, reagitated into flames by the wind; pieces of roofs suspended at odd angles across telegraph wires; stark outlines of building left partially standing; homeless people seeking shelter in abandoned streetcars; a fantastic, overwhelming sense of ruin and helplessness on all sides. I remember I thought at the time that this was, in truth, the valley of the shadow of death. It appears even more so in recollection.

By morning we had arrived in our new camp (new to us) in the Maryama district of Kobe. The camp was vermin-infested and the Japanese cut our ration to two meals a day, less than an estimated 800 calories. This was when rice was really life. It was measured to the last gram. It was doled out, the first time around with a bowl and a paddle; then with a spoon; then practically by the grain.

If one man had a noticeable bit more in his bowl than another it meant a quarrel. The man who doled out the rice was a public figure, indeed. He was generally selected by his fellow prisoners as a person of forthright honesty coupled with an uncanny sense of equality in his ability to standardize and equalize all rice rations. He gambled his reputation with each meal on the possible slip of a spoon or too much pressure on one man's bowl with the paddle and not enough on another's. All these were resultant circumstances because there was not enough rice, and we "understood" that rice was life.

Our new camp location was in the Maryama district of Kobe on a high elevation where, even in July, the nights were cold. One day the Japanese quartermaster took five of the enlisted staff, procured a hand-drawn cart, and informed them that they would go to the site of the former hospital to see what could be salvaged. As one of the five, I was very happy to make the 8-mile trek, because it meant a change of environment, if only for a day; also, the quartermaster had promised us a noon meal somewhere along the way.

Of the group, two were American, two were British, and one was Australian. There was a little talking among us; we grated somewhat on each other's personalities. This is always the way when men are hungry. Furthermore, we knew each other too well. Each knew instinctively what another would say concerning almost anything.

We stopped once to smoke some of our precious tobacco. Tobacco was the second most vital item to rice. Much as we irritated each other, we always shared our tobacco because there was no telling who might have tobacco when you had none. It was a sort of investment in the future. We rested, smoked, then went on again, dragging the heavy cart, in turn, silently relieving one another in relay. At 2 o'clock we arrived at the old site. Hopefully and hesitatingly we questioned the quartermaster regarding the promised meal.

Maybe because it was a lovely summer day; maybe because he knew things we didn't; I'm not sure. I prefer to believe the former, and I still believe I'm right. In any event, he bared his teeth in a jagged grin. "*Ima* (eat now) *messy-messy,*" he said. We asked the logical next question: "How much?" Then he uttered the word that threw us into stark ecstasy. "*Toxon,*" he said. "*Toxon*" means "plenty," "all you want," "a great deal" or whatever inference one prefers to give it.

Though the once beautiful Kobe was a rubble, the day was more lovely already. Evergreens on the slopes were sharp in panoramic relief against a soft afternoon sky. The harbor glistened in the distance. A beautiful rosebush clung bravely to a trellis, both adjacent to a tree that had been scorched. I thought then how inseparable are life and death but it was still a rosebush and still alive and therefore still beautiful.

The quartermaster showed us where to get a cauldron and a sack of rice. The cauldron was rusty and the rice full of gravel and sand. What did we care how much gravel was in the rice? It could be washed. I found myself looking at the Australian and he at me. Then we found ourselves laughing. Then we noticed the other three laughing in unison; and there we stood; laughing like little children; laughing because there was no other way to express ourselves; maybe laughing partly at our ludicrousness. I don't think I quite know yet. Then it came upon us simultaneously as thoughts do when men know one another too well—we didn't hate each other any more. The long pent-up emotions of laughter and love had been opened by one sack of gravelly rice. We were closer to each other then than in long, long months.

We turned to, built a fire, cleaned the rice, scoured the cauldron, drew some water, put the rice in the cauldron, measured the water in proportion to the rice, then poured it into the cauldron, and the cooking commenced.

We shared our tobacco around. It was all too wonderful. We watched the water start to boil in the bottom of the cauldron. We watched the grains of rice swell. The first small bubbles turned into larger ones as the water came to a full boil. When the rice had absorbed the excess of water and the surface grains had steamed to dry, flaky kernels, we knew that the rice was done. We would have our stomachs full—truly full for the first time since last December, and this was July. We had tobacco for two more rounds yet. We would have enough rice to take some back with us, the quartermaster being willing. Oh, life was good that day; and even now when I think about it and write about it, I still feel a remnant of the ecstatic twinge of the senses that I felt so keenly then.

We stood over the cauldron and heaped up the bowls that the quartermaster had borrowed for us. We didn't have to measure it, all we had to do was heap it up, just heap it up, and then start on another bowl full. We didn't talk until the first bowl was gone. Seldom did prisoners talk while eating. It proved a distraction from the pleasure of eating. On the second bowl the talk started. Our talk didn't bore us; not today. The Australian was witty. The Britishers were not dull either; not any more. Rice was life and we had "toxon."

We had rice left over. We found a wooden bucket and put the rice in it. We hoped that we might take it back to camp. We set it at one side so it wouldn't be conspicuous. We didn't want to make the quartermaster angry by having him think that we were wasteful with the rice when he had truly been generous. We loaded the cart with salvaged, half-burned blankets. At 1700 we were ready for the long haul back to camp. Our stomachs were still full. We laughed and swapped stories. The sun was still high in the west. The green mass of pines on the slope above that had known peace and seemed quietly waiting for its return, appeared to know; yes, they even appeared to know that we—all five of us—had had enough rice.

We started back to camp. The road was rough and hilly. The blankets were an awkward, cumbersome load, making the cart difficult to pull. The wheels grated for lack of oil. Three pulled and two pushed from behind. Still, it was all right; we worked willingly. Our bodies and minds were agile and alert. Our clothes stuck to our bodies and we were dirty; but all this was secondary because for once we were not hungry. Life was good again.

At dusk we stopped at the half-way mark to rest. We brought out the bucket of rice. The quartermaster told us that we must not eat when a Japanese civilian passed, because it might cause talk. He informed us that such an enormous amount of rice among five men would cause trouble in a small suburb where rations were short. He stated that he, himself, might have to answer for it. Two civilians passed in the deep dusk. We hid the bucket and ceased mastication, our mouths still full, until the quartermaster said that we might eat again.

It was fully dark and the moon was high when we topped the last hill before entering the camp. A dog bayed somewhere, and night birds were audible in the pines. It was a correspondingly beautiful night to the afternoon just passed; not a night for a prison camp. I remember musing that somewhere people walked arm in arm and found love and beauty in each other; things that we had all but forgotten. The camp seemed right for us. It was a dim dream that we had ever been free men; it was an even stranger fantasy that we would ever be free again, though we sensed that enough as the time was drawing close.

Right then we had had enough and still had enough rice. That was the important thing because *rice was life.* □

LT Bolster retired in 1955. He died in 1972.

In Memoriam

Courtesy of Patti Kathleen Brannon

Thomas F. Brannon, Jr.

CWO **Thomas F. Brannon, Jr.,** HC, USN (Ret.), died 5 Sept 1989 in Gainesville, FL, after a long illness. He was 74.

Brannon was on the staff of the Canacao Naval Hospital in the Philippines when he and his comrades became prisoners of the Japanese. He spent the next 37 months in Manila's Bilibid Prison until the U.S. Army First Calvary liberated the camp on 4 Feb 1945.

When it was available, "The food was terrible," he later recalled. "It was mainly rice. I've eaten peanut vine soup, camote-top soup, and whole-grain boiled corn." His Japanese captors put him to work in the prison commissary, where he often was able to pilfer food for himself and his buddies. This job probably kept him alive, even though he suffered several bouts with dengue fever and deficiency diseases.

When he returned to the United States, Brannon received treatment at the Naval Hospital in Dublin, GA. He later served at Guantanamo Bay; Miami, FL; Beaufort, SC; Fort Worth, TX; and Jacksonville, FL.

In retirement he worked for the College of Pharmacy, the University of Florida at Gainesville.

CWO Brannon's younger brother Hugh, a submariner, was lost at sea during World War II.

Straight Talk on Dental Corps Career Planning

CAPT George J. Tarquinio, DC, USN

In these days of austere promotional opportunities, career planning is becoming more and more critical for realizing success and gratification in your career. There is no textbook which gives you "the" way to plan your career. Career planning is the process by which you, as an individual, look at the available options and opportunities and make plans according to your personal interests, needs, and professional objectives.

While planning your career, it is important to understand the stages through which you may progress. Figure 1 illustrates the three primary phases in the career of a Dental Corps officer. Each lists the typical positions available and the general progression of assignments and promotions. The successful dental officer must have the appropriate educational background, professional experiences, acquired skills, training, and the inherent ability and aptitude for each assignment in the phase. Timing, circumstance, and opportunity have a definite impact on your career planning. Therefore, individual variations in the assignments listed in Figure 1 are not unusual.

Basic Military Dentistry Phase

This is the foundation of your career and is designed to augment your professional and military development and experiences. This "performer or execution" phase is critical in developing self-confidence through hands-on experience commensurate with your education and skills. It is important to learn time management and, more importantly, productivity as you progress through this phase. You should be exposed to all aspects of dentistry in a variety of settings to identify your interests, aptitude, and ability in a specialty area as you decide if you will specialize or remain a generalist. Assignments during this period should reflect these objectives, keeping in mind the operational billet and time-in-service requirements for augmentation and additional dental education. It usually takes 5-7 years to mature sufficiently for the next phase. Be careful you don't move too quickly through this phase. This time is essential for developing self-confidence and an overall understanding of the system.

Advanced Clinical/Intermediate Management Phase

Here you strive to reach a higher level of clinical proficiency and develop supervisory/managerial skills. If you specialize, you should be pursuing board certification. Those with increased administrative and managerial responsibilities should be expanding their skills through mid-level management short courses, service schools, and masters-level college courses.

Assignments which will increase your knowledge, skills, and aptitude are essential for professional development and utilization, and usually extend from the 5th to 20th year of active duty. It may extend longer for some dental officers based on individual preferences or needs of the Navy.

Academic Clinical/Executive Management Phase

Dental officers who demonstrate outstanding leadership qualities and/or exceptional professional competencies in prior staff/executive management positions will progress to this phase. You are expected to plan, execute, and develop innovative programs in dental education, administration, and management; develop and perform responsible roles for the delivery of dental health care; exercise mentor responsibilities for junior officers; provide guidance and career-enhancing experiences for subordinates; serve in top-level management assignments with policy development and implementation responsibilities; and promote new state-of-the-art concepts and systems to meet the mission objectives of the Navy Medical Department.

Only experienced, senior dental officers who demonstrate professional, managerial, and executive excellence in responsible positions of maximum scope will be providing leadership for the Dental Corps and the Medical Department. They will define, design, and implement dental health care systems, integrate appropriate new dental techniques, materials, and standards of care; encourage and support dental research; advise, consult, and coordinate all matters pertaining to dentistry and the interaction of dentists with other health care providers and military community representatives; plan for requirements in budget, material, and personnel resources; and be involved in the development and implementation of policy in the Bureau of Medicine and Surgery, the Office of Chief of Naval Operations, or the Department of Defense.

You should pursue carefully-planned, progressively-advanced assignments and educational opportunities which will enhance and improve your professional and

managerial skills. Additionally, you should participate in senior-level Bureau of Medicine and Surgery and other Department of Defense management courses appropriate for current or future assignments. This phase of development begins approximately in the 15th year of active duty and extends to retirement.

Self-Assessment

To develop a realistic, meaningful career plan, you need to examine your capabilities, desires, interests, and objectives and, with knowledge of available opportunities, determine a course which will most likely achieve the desired results.

Before attempting to plan your career, you need to answer some very specific questions about yourself:

- ***What do I enjoy doing the most?*** Do I want to become a specialist or do I enjoy all aspects of dentistry and prefer to remain a general dentist? What experiences do I have that will allow me to make this decision? Do I need further experience before making a decision?
- ***How much money do I really need?*** We all must live within our means. You should weigh practical and realistic issues such as family requirements and personal desires and how they meld with the benefits of our military system. If your expectations vary greatly from that which the system offers, then you need to reevaluate your expectations or choose another system.
- ***Where in the world do I want to work today and in 5, 10, 15, or 20 years?*** You can count on moving throughout your military career. Moving is trying and demanding, but it is career enhancing both professionally and militarily, and the experiences and benefits usually outweigh the negative factors. Moving gives you a broader perspective of the Navy and provides the opportunity for proven performance in a variety of challenging undertakings. Where you will work throughout your career will be determined in part by your qualifications, personal preference for assignments, and the availability of that assignment.

DENTAL CORPS CAREER PLANNING CHART

GRADE	YEARS ACDU	YEARS PROMO CREDIT	DEV. PHASE	2200 Typical Assignment 2000		CONTRIBUTORY PREPARATION
	30	*	ACADEMIC/CLINICAL — EXEC MANAGEMENT	Chief of the Dental Corps		
	29	*			OP-093 Staff	
	28	*			BUMED Staff	
FLAG	27	*		Fleet Dental Officer		
	26	30		Regional HSO		
	25	29		Commanding Officer, NDC	DOD Staff	Exec. Training Program
******	24	28		Executive Officer, NDC	OP-093 Staff	Interagency Institute
	23	27		The Dental Officer, USMC		
				Staff BUMED, NMPC, OPNAV, HSETC	NMPC Staff	Command LMET
	22	26		Fleet Force Dental Officer		
				Staff NDS Bethesda, Specialty Advisor	BUMED Staff	CO/XO Screen
CAPT	21	25		Battalion Commander, FMF		
				Company Commander, FMF	HSETC Staff	PCO/PXO Course
	20	24		Director, Branch Clinic		
				Department Head NH, NDC		Senior Service College
	19	23		Asst. Dental Officer NDC, NH, FMF		
				Dental Research		CDE Courses
******	18	22	ADV CLINICAL — INTERMED MGT	Director, Branch Clinic	NMPC Staff	SMRCC
	17	21		XO, FMF Dental Company		
	16	20		Department Head NDC, NH	BUMED Staff	Service College
	15	19		Department Head, Afloat		
CDR				Asst. Dental Officer NDC, NH, FMF, Afloat		Senior LMET
	14	18		Staff, NDS Bethesda		
				Dental Research		CDE Courses
	13	17		Postgraduate Dental Education		C4A
******	12	16				
	11	15		Dir. Branch Clinic, Branch Annex Clinic		(MANDEV, ILMET)
	10	14		Asst. Dental Officer NDC, NH, FMF, Afloat		Board Certification
LCDR	9	13		Department Head Afloat	BUMED Staff	Residency, ACP training
	8	12		Postgraduate Dental Education		
	7	11		Dental Research		CDE Courses
******	6	10	BASIC — MDENT	Postgraduate Dental Education		Navy Correspondence Courses
	5	9		Department Head, Afloat		
	4	8		Dental Officer, MCB		
LT	3	7		Dental Research	BUMED Staff	C4
	2	6		Asst. Dental Officer NDC, NH, FMF, Afloat		CDE Courses
	1	5		General Practice Residency		
				(Officer Indoctrination School) DENTAL SCHOOL		

Figure 1. (Modified from Appendix A, *U.S. Navy Medical Department Officer Career Guide*, NAVMED P-5128, 1985, pp V-7.)

- ***What are my personal strengths and weaknesses?*** You should consider both your professional and military characteristics. To avoid being biased and to get a fair appraisal of your personal strengths and weaknesses, seek the views of your mentors and superiors along with their recommendations for improvement. Your strengths and weaknesses will need to be reevaluated periodically throughout your career.
- ***What kind of professional do I want to be in 20 years?*** Do you desire to remain a clinician throughout your career or pursue the road to command? For the clinician, the epitome of a successful career may be as department head or in a staff position at the Naval Dental School. If this is your goal, then board certification and successful departmental supervisory experiences are a must. If you aspire to become Chief of the Navy Dental Corps, then you must have a broad-based background with leadership and managerial achievements to further substantiate your potential for success.
- ***What additional education do I need?*** Additional education is an absolute must in career planning whether you remain a clinician or pursue the road to command. Continuing dental education, advanced clinical programs, residency training, and managerial courses are essential in achieving your goals. You should review all programs available and seek those which are appropriate to your desires and ambitions.
- ***How do family considerations affect the above?*** Don't forget to involve your family in all career decisions. It's their lives that are being planned, too!

Goal-Setting and Networking

The answers to these questions will help you take the first major step in your career preparation process—setting your goals. Goal-setting allows you to proceed with a sense of purpose and direction as you establish priorities, apportion your time, and plan to meet your objectives.

To validate your goals, seek the advice and counsel of senior officers, a mentor or "seadaddy," your assignment officer, and the Dental Corps Plans Officer. This networking provides a wealth of information to assist you in evaluating your assets, limitations, and competitiveness for various assignments, and aids in developing the skills necessary to attain your goals. The advice you get from these officers will vary from very good to inappropriate. "This is how I did it" advice may not be applicable in today's situations, and you should be skeptical of anyone who tells you "the best way to do it." Evaluate all types of advice and use that which is most appropriate.

Using what you have learned from self-assessment and networking, you can identify goals which meet your professional and military objectives. Goal-setting should include both short-term and long-range elements for reaching your desired position in the Dental Corps. Short-term goals are important in monitoring your progress against experiences and opportunities available in the near future, and serve as stepping stones toward success. Long-term goals reflect your bottom line. They must be periodically evaluated for course corrections in response to evolving policies, changing desires, family circumstances, or modified career patterns.

Tracking Your Course

Considering all the variables, your career planning must be a dynamic process that allows for occasional detours and delays. As you find it necessary, rechart your course, seize new initiatives, and take advantage of available opportunities for innovative professional growth. As VADM Boorda, Chief of Naval Personnel said, "There is one very real constant in career planning for naval officers. It is perhaps the only constant. It is: *things will change during your career*.... Career planning is a fluid thing. The Navy changes, careers change while you are doing them . . ."(*1*)

Regardless of how astutely careers are planned, you will find that *the* most important factor in your professional progression is *"sustained, superior performance."* Outstanding performance, through increasingly responsible assignments, sets the stage for greater opportunities and advancement. If you want to be a captain, you must have the professional and military experiences, clinical and administrative qualifications, and proven performance required of that rank. You will not be promoted to the rank of captain just because you have been in the Navy 20 years. Selection for the next higher rank is not a reward for past successes, but an indication of your potential for the responsibilities of that rank based on past proven performance.

One never knows when an *opportunity* will present itself. Many of these opportunities are not "fun things to do," but the officer who succeeds and progresses to the top is the one who recognizes and takes advantage of them. At the end of World War II, the Secretary of the Navy said in a message to his officers, "It is intended that the highest posts will be filled by officers of the highest attainment, regardless of specialty. Be assured, whatever may be your field of endeavor, that your future as an officer rests, as it always has, in your hands. The outstanding officer will continue to be the one who attacks with energy and enthusiasm the tasks to which he or she is assigned and who grows in stature and understanding with years and with experience. Responsibility comes to the officer who seeks responsibility. It is this officer, regardless of his or her field of effort, who will be called to high command."(*2*)

References

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2. U.S. Navy Medical Department Officer Career Guide, NAVMED P-5128, 1985, pp VI-4. □

Dr. Tarquinio is Dental Corps Plans Officer, Bureau of Medicine and Surgery (BUMED-532), Washington, DC 20372-5120.

Psychiatry and Field Medical Training

CAPT Brian G. McCaughey, MC, USN
COL James W. Stokes, MC, USA

MEDEX '89 took place 20-25 June 1989 at Camp Shelby, MS, and involved over 5,000 Army National Guard; Army reserve and active component medical personnel assigned to 48 medical units. During the exercise these units had the full range of logistical and administrative problems that could be expected to occur in wartime. Included in the exercise were two Psychiatric Detachments. At full strength they comprise 48 mental health professionals consisting of psychiatrists, psychologists, social workers, psychiatric nurses, and technicians. However, each came at about half strength.

Battle Fatigue Training

Battle fatigue is a psychological problem unique to the combat environment and very different from anything found in the *Diagnostic and Statistical Manual of Mental Disorders* (3rd edition revised). Therefore, it is very important that military medical personnel, who may be familiar with many mental disorders that are seen in a peacetime setting, also be trained to identify and manage this highly variable disorder properly.

The importance of battle fatigue is well documented by the large numbers of cases that have come to medical attention in past wars, over 30 percent of all casualties for some battles. Based on historical data planners anticipate that for a NATO conventional war, the ratio of wounded in action to battle fatigue cases will be 1.5 to 1. About half the battle fatigue cases will require treatment in a medical facility for more than 1 day.

Military medical personnel trained to use well-established management principles can return most of the battle fatigue cases to duty to their original unit in a short time—72 hours or less. The successful return of many servicemen to duty conserves fighting strength and medical resources and decreases the serviceman's risk for long-term disability.

A battle fatigue casualty expresses his feelings to a psychiatric nurse.

Members of the 134th Casualty Support Hospital provide assistance for the wounded following an attack.

The complaints associated with battle fatigue vary considerably, but a typical case is a 19-year-old infantryman who has been in combat for 6 days and now complains of nightmares and intrusive thoughts about a friend that died next to him in battle. He is afraid, tired, cold, and hungry, and no longer able to function adequately.

Care for his problem would be guided by the battle fatigue management principles in the acronym PIE: Proximity, Immediacy, and Expectancy. He would be given a brief (from 1 to 3 days) respite from the battle in a place as near to his unit as possible (Proximity) as soon as he is identified as having battle fatigue (Immediacy) and he would be told that his condition will improve with rest, which will enable him to return to full duty (Expectancy).

During the 1- to 3-day management period, he would be encouraged to express his feelings about his experience. He would also perform some military duties to restore his confidence as a soldier. He would be discouraged from thinking of himself as "sick" or as a "psychiatric patient."

At the beginning of MEDEX '89 the psychiatric teams reviewed battle fatigue management principles. During the exercise, battle fatigue role-players presented to many of the treatment facilities. Each of the role-players received a card that had carefully written instructions about what to say, how to act, and how to change their presentation if they were treated correctly or incorrectly. The cases covered the broad spectrum of battle fatigue types.

The role-players presented their problems to medical personnel who then instituted appropriate management techniques. Most cases entered the medical care system as if they were coming from battalion aid stations and going to the medical clearing companies. A few went directly to hospitals during mass casualty exercises. Each psychiatric team maintained a "restoration center," co-located with, but separate from, a combat support or field hospital. One of the teams also maintained a triage/treatment team at a medical company.

A unique training opportunity appeared the morning of 21 June. The 134th Combat Support Hospital (134th CSH) was scheduled to be attacked by enemy air forces. In this scenario, the enemy attack would cause severe losses and the unit would be permanently disabled, resulting in the transfer of the survivors to other commands. On that morning, at the same time that the 134th CSH members were having moulage applied to simulate various battle wounds, a mental health team was applying "psychiatric moulage" to 30 volunteers.

The role-players were briefed on how to act and what to say. U.S. Air Force A-10 aircraft simulating enemy aircraft appeared promptly at 0930 and effectively "attacked" the 134th CSH. Subsequently, requests for help went out to other medical units. Help arrived later that morning. The first units were military police who secured the area. Later, others arrived, including hastily mobilized teams from the psychiatric detachments.

The psychiatric team leader met with the 134th CSH Commander (who graciously agreed to be a role-player in the form of a highly distressed commander who had just lost most of his unit). He and other members of his unit were quite convincing. The psychiatric teams quickly found those nonwounded survivors who were in significant distress and triaged them. Where appropriate, they initiated battle fatigue management principles.

Time constraints demanded that this part of the casualty play end at 1200 hours. However, during this brief time, the psychiatric teams saw the kinds of problems they would encounter in a real situation. They were also able to initiate management procedures. During the debriefing the teams were appraised on what intervention techniques were helpful and useful, and what could be done to improve the intervention.

It is also noteworthy that the psy-

Photos by CAPT Brian G. McCaughey, MC

chiatric teams treated and returned to duty several soldiers suffering from real stress reactions that occurred during the 5-day exercise. They also provided medical unit leaders and troops with command consultations which helped prevent many more stress problems.

Discussion

Attending MEDEX '89 was an opportunity for the first author to observe another service's exercise, to participate in training mental health personnel, and to see how another service solved administrative and organizational problems. Key parts of the training were:

- Teaching theoretical aspects of the subject prior to going to the field.
- Reenforcement of the basic battle fatigue management principles through discussion in the field.
- Creating an environment similar to one that would be expected in the real situation (battle fatigue role-players and real-world stress cases in a field environment).
- Practicing interventions.
- Critically evaluating the mental health teams' performance.

Because realism was an especially important issue, there was a considerable effort to portray the battle fatigue cases as realistically as possible.

The need for periodic field training in medical specialties is obvious. What should be equally evident is the importance of full participation in that training by the mental health team. □

Dr. McCaughey is assigned to the Department of Military Medicine, Uniformed Services University of the Health Sciences, Bethesda, MD 20814-4799. Dr. Stokes is with the Behavioral Science Division, Psychiatry and Neurology Branch, Fort Sam Houston, TX 78237-6100.

An Updated Therapeutic Review

Zidovudine

LT Mark E. Brouker, MSC, USN
Sarah E. Donegan, Pharm. D.
CAPT Walter W. Karney, MC, USN
CDR Douglas L. Mayers, MC, USN

Retrovir (zidovudine [formerly called azidothymidine or AZT]) is the first antiviral drug approved for treatment of human immunodeficiency virus (HIV). FDA stipulates that certain adult patients with symptomatic HIV infection (AIDS and advanced ARC) who have a history of cytological confirmed pneumocystis carinii pneumonia (PCP) or an absolute CD4 (T4 helper/inducer lymphocyte) count of less than 200/mm^3 are candidates for zidovudine therapy. As AIDS Clinical Trials Group (ACTG) study results evaluating the benefits of initiating lower dose zidovudine in asymptomatic HIV-infected patients are being reported, new questions regarding zidovudine therapy arise.

Based on these studies, it is likely that the FDA will soon consider changing zidovudine dosing and indication guidelines. These changes will dramatically increase the HIV positive beneficiary population eligible for zidovudine therapy. It is further agreed that this increase will force noninfectious disease physicians, i.e., general medical officers (GMOs), to monitor patients on zidovudine. Inconsistent therapeutic intervention in this patient population not only is a quality assurance issue but becomes a cost issue as annual zidovudine treatment currently averages $6,400 per patient.* This cost issue has been extensively evaluated and additional funding has been requested. Clearly, however, there is a need for an intensive educational effort concerning all aspects of the drug zidovudine.

The following information, which is based on current FDA-approved guidelines, is the initial step toward completion of this goal.

Pharmacology and Pharmacokinetics

Zidovudine inhibits in vitro replication of retroviruses, including HIV, by interfering with viral reverse transcriptase. Zidovudine must be converted to the triphosphate form by cellular thymidine kinases, thus it is formed in both virus infected and uninfected cells. Zidovudine triphosphate competes with thymidine triphosphate for in-

*Based on current FDA dosing guidelines. Also cost of $1.20/capsule.

corporation into viral DNA. Once incorporated in the DNA, it prematurely terminates chain synthesis.

Zidovudine is rapidly absorbed after oral administration and has a bioavailability of approximately 65 percent. It is not highly protein bound and distributes well into the CSF. Zidovudine has a plasma half-life of approximately one hour. Eighty percent of an oral dose is metabolized by the liver to glucuronide metabolite (GAZT). GAZT is then eliminated in the urine. Eighty to 95 percent of an oral dose is eliminated within 6 hours.

Dose and Administration

Zidovudine is only available commercially as 100 mg oral capsules. The usual starting dose is 200 mg po q4h around the clock. The dose may be reduced to 100 mg q4h if certain side effects develop or if the patient cannot tolerate the higher doses (see adverse effects). The dosage should also be reduced in patients with renal or hepatic dysfunction.

Patient compliance with the intensive dosing schedule and followup visits for therapeutic monitoring need to be ascertained. In general, if a patient cannot be followed closely enough to monitor for hematologic toxicity, he/she should not be started on zidovudine. If the decision to treat is made in such a patient, a limited supply of zidovudine should be prescribed in an effort to encourage return visits.

Until ACTG studies evaluating the benefit of lower dose zidovudine (500 mg/day) in HIV positive patients with CD4 counts less than 500 are completed, prescribing of zidovudine should either follow FDA guidelines or those which the Head, Navy HIV Program recently promulgated to all Navy HIV Evaluation Units.*

Adverse Effects

Major adverse effects are anemia and granulocytopenia. Both abnormalities are directly related to dose and duration of therapy and inversely related to CD4 (T4) lymphocyte counts, hemoglobin, and granulocyte count at the start of therapy. Patients who have more advanced or longstanding disease or who are debilitated appear to be more susceptible to these toxic effects.

The two anemias that are related to zidovudine therapy are macrocytic megaloblastic anemia and the more serious normocytic normochromic anemia. Each requires different types of therapeutic intervention as outlined below.

Macrocytic megaloblastic (usually mild):

- Develops in 2 or 3 months.
- Occurs in one-third of the patients.
- May occur as early as 4-6 weeks.
- Dosage modifications unnecessary.
- Transfusions indicated with hemoglobin < 8gm/dl (up to 25 percent cases may need transfusion)—continue full therapy.

Normocytic normochromic (usually severe):

- Occurs in small number of cases from the 4th to 12th week of therapy.
- Discontinue zidovudine for 7-10 days.
- Transfuse (usually 2-3 units).
- Restart zidovudine at full dosage once hemoglobin is at baseline levels.
- Transfuse as needed (may be required every 3 weeks).
- Reduce zidovudine dosage to 100 mg q4h if excessive transfusion (> 4 units every 3 weeks) are required.
- Protocols underway to evaluate safety and efficacy of recombinant erythropoietin.

Granulocytopenia has developed in a large number of patients receiving zidovudine and is common in advanced stages of AIDS regardless of zidovudine therapy. The following guidelines should be followed:

- Discontinue zidovudine if granulocyte count is < 500/mm^3.
- In advanced HIV disease, reduce dosage to 100 mg q4h when granulocyte count is < 750/mm^3 and resume full dosage once count starts rising. If count again drops, discontinue zidovudine and restart at lower dosages once count starts rising again.
- In less advanced HIV disease, reduce zidovudine dosage to 100 mg q4h once granulocyte count drops to 50 percent of baseline and resume full dosage once count starts rising.

Other major adverse effects of zidovudine include thrombocytopenia (rare) and myositis. Myositis, characterized by myalgias, proximal muscle weakness, and elevation of serum creatinine kinase, is associated with prolonged therapy and has not been described during the first 6 months of therapy.

Minor effects, most of which subside within 2-3 weeks of therapy and thus do not necessitate discontinuance, include headache, nausea, vomiting, abdominal discomfort, diarrhea, insomnia, transient agitation and restlessness, fever, rash, changes in nail pigmentation, and neurological toxicities (rare). If symptoms persist, ibuprofen can be given for minor aches and an antiemetic for nausea.

*Patients with CD4 counts < 400 cells/mm^3 with signs/symptoms of progressive HIV infection can be considered candidates for zidovudine therapy.

Drug Interactions

Acetaminophen (Tylenol). Concurrent use of acetaminophen with zidovudine should be avoided as this combination has been associated with an increased incidence of bone marrow suppression. The mechanism is presumed to be due to competitive inhibition of hepatic glucuronidation resulting in increased levels of zidovudine.

Trimethoprim-Sulfamethoxazole (Septra) or Probenecid (Benemid). These medications interfere with hepatic glucuronidation, decrease metabolism of zidovudine, and can potentially increase toxicity. However, prophylactic trimethoprim-sulfamethoxazole can be given with zidovudine for prevention of pneumocystic carinii pneumonia with caution and hematological monitoring. Also, recent studies have suggested that giving probenecid with zidovudine could result in reducing the daily dose of zidovudine.

Phenytoin (Dilantin). Phenytoin and zidovudine therapy results in subtherapeutic phenytoin serum levels. Patients receiving this combination need to have phenytoin levels periodically monitored.

Ganciclovir of Cytotoxic Drugs. These combinations are associated with an increased incidence of bone marrow suppression.

Ribavirin (Vidarabine). In vitro studies indicate ribavirin antagonizes the antiviral effect of zidovudine. This combination should be attempted only under carefully controlled conditions.

Counseling of Patients

The following topics should be discussed with the patient at the start of zidovudine therapy:

- Review pathophysiology and nature of HIV infection.
- Explain that HIV is a longstanding chronic viral infection which, if allowed to continue unimpeded, will progressively weaken the immune system.
- Explain that zidovudine is not a cure for AIDS but can possibly minimize damage to the immune system.
- Discuss the results of the clinical phase II trial, which showed a significant extended survival rate in patients receiving zidovudine verses patients receiving placebo.
- Openly discuss the risks vs. benefits, known toxicities, limitations, and circumstances under which therapy will be discontinued.
- Before taking any medications (including OTC), consult your physician and/or pharmacist.

Patient Monitoring (Based on Current FDA-Approved Indications)

At the initiation of therapy, a CBC should be obtained every 2 weeks for the first 3 months. If hematological parameters are maintained, a CBC, once a month is sufficient.

For severely ill patients (CD4 count $< 200/mm^3$ or preexisting anemia or leukopenia), the patient should be monitored every 2 weeks indefinitely.

All patients on zidovudine should be seen every 2-4 weeks for evaluation.

Conclusion

As mentioned, this article is provided in an attempt to resolve the confusion generated from recent reports evaluating the benefits of initiating low-dose zidovudine in asymptomatic HIV infected patients. As such, it is the initial step in a multifaceted educational effort to establish consistency concerning zidovudine therapy in Navy medicine and, more importantly, to maximize the quality of medical care for a growing patient population.

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LT Brouker is completing a hospital pharmacy residency at the National Naval Medical Center (NNMC), Bethesda, MD 20814. Dr. Donegan is Clinical Coordinator, Pharmacy Department, NNMC. CAPT Karney is Head, Navy HIV Program, NNMC. CDR Mayers is attached to the Naval Medical Research Institute, Bethesda, MD 20814.

Let's Get Realistic

I wish to respond to a statement made by CAPT Arthur M. Smith, MC, USNR-R, in his article "Let's Get Realistic About Medical Preparedness for War," which was in the September-October 1989 issue of *Navy Medicine*. In his article, CAPT Smith relates a conversation between himself and a Navy medical officer attached to a Marine Corps unit about to deploy, concerning the training of hospital corpsmen. The medical officer's concern is that there is more emphasis from his superiors on CPR training than on training in tactically relevant field medical skills.

The fact that CAPT Smith inserts such a generalized statement without providing a timeframe or location leads the reader to erroneous conclusions about the training of hospital corpsmen in the FMF. I can only speak for the time I served at 2nd Marine Division (1985-1988), but wish to refute the above statement. The Combat Corpsman Course that was developed and implemented in 2nd Marine Division provided the exact training that this medical officer describes. This course's curriculum consisted of modules that included EMT-B, EMT-I, IV and suture certification, and MAST trousers classes. Training methods fostered innovative techniques that included the use of chicken legs for suture training, pork ribs for teaching chest tube insertion, and the use of cosmetic moulages for more realistic training. In addition, the training staff through the support of the Tank, LAV, and AAV Battalions, taught extrication from these vehicles. It is also important to note that the development of this training program was accomplished primarily by the corpsmen in the division medical training section with active involvement of several of the battalion surgeons (junior lieutenants). In this case, the "superior" provided guidance and no limits as to what could be accomplished.

I do not believe that 2nd Marine Division was alone in these efforts in the FMF and that such training, as developed by the operational units, has now been incorporated into the expanded curricula of the Field Medical Service Schools. Again, speaking from my own experience, corpsmen in 2nd Marine Division were trained to function independently in the field during combat or any exigency. The latter was proven by the high quality of treatment provided by division corpsmen responding to emergencies that occurred during training and deployments. Many of these incidents were documented by the awarding of medals to those corpsmen involved.

I can honestly state that our actions in 2nd Marine Division demonstrated that we were realistic about medical preparedness for war. This realism extended to EMT-B/IV training to selected marines, chaplains, and dentists. The training of these personnel serves as a multiplier for available medical assets and can be critical to saving lives during combat.

As a footnote, the division goal for corpsmen CPR training was to maintain 100 percent for all corpsmen. All HM-8404 corpsmen are expected by doctrine to provide sick call care while in garrison or on deployment. CPR is a basic requirement of all health care providers trained in the United States. Through the use of CPR instructors in each unit the percentage was normally in the nineties for the division as a whole and almost always 100 percent for all deploying units. CPR training was part of the combat corpsmen training as well.

CDR J.A. Kramer, MSC

I'm writing in regard to CAPT Arthur M. Smith's article "Let's Get Realistic About Medical Prepardness for War," which appears in the September-October 1989 issue of *Navy Medicine*.

As Command Master Chief of 2nd Marine Division I take exception to a statement in the article which insinuates that medical preparedness for deploying corpsmen in the FMF is based predominantly upon their ability to perform CPR. Hogwash! The statement leads one to believe that this is the standard for all FMF units. This is far from the truth.

During indoctrination to the command, every hospital corpsmen assigned to 2nd Marine Division is certified in CPR, IV, suture, and MAST trousers. These corpsmen have to demonstrate their skills in the above areas prior to completion of certification. Our Medical Training Department uses computerized Resusci Annes for CPR, artificial limbs for IV, and animal tissue to demonstrate suturing ability. In addition, 2nd Marine Division offers EMT, EMT-I Advanced Trauma Management, and clinical assistant and combat survival skills. In each of these courses demonstrated practical skills are graded and must be passed before the student can satisfactorily complete the course. Also, a comprehensive inservice training program is in place to maintain the skills taught.

Other mechanisms are in place to monitor and test the corpsmen once assigned to a battalion. Prior to deploying each battalion conducts a variety of medical exercises to test the medical readiness of the battalion corpsmen. The corpsmen never know what type of simulated casualties will be presented to them, nor do they know what skills they will be required to demonstrate.

The corpsmen assigned to 2nd Marine Division are without a doubt the best trained and the most highly motivated in the history of corpsmen serving with the Marines. As was our predecessors, they are medically armed with a Unit-1, reinforced with resourcefulness and imagination to do the job with whatever means or materials available.

By the way, your statement, "In the comparative *luxury* of the Vietnam war," didn't go down too well either, Captain. Poor choice of words, sir.

HMCM G.L. Thornhill

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